

On the performance of space-time cooperative relay in fading channel

Abstract:

Cooperative relay has been an interesting research area for the past years as it promotes higher data rates and robust to wireless environment. IEEE Work Group initiated the use of relay stations in the IEEE 802.16e standard and it is called IEEE 802.16j. This paper proposed a multi-hop cooperative relay system with space-time codes (STC), with the integration of relay selection. In changing environment, data transmission signals through wireless channels can be degraded by factors like shadowing, fading etc. Cooperative relay system is believed to offer robustness by multipath routes to destination. The cooperative relay system in this work adopted the virtual MIMO (multiple input multiple output) concept. Analysis of performances are made between topologies of space-time cooperative relay systems and compared with cooperative relay transmission.